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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,165	01/12/2004	Massimiliano Barone	02-AG-540/AL	2118

25235 7590 08/31/2007
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EXAMINER

WOLDEMARIAM, AKILILU K

ART UNIT	PAPER NUMBER
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2609

MAIL DATE	DELIVERY MODE
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08/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/756,165

Applicant(s)

BARONE ET AL.

Examiner

Aklilu k. Woldemariam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 19-22 is/are rejected.
- 7) ☐ Claim(s) 14-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 01/12/2004
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on January 01, 2004 was filed after the mailing date of January 01, 2004. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. **Claim 22 is** rejected under 35 U.S.C. 101 because the claimed invention is not supported by computer readable medium. No Physical transformation is present to establish a practical application of the abstract idea. The result (computer program product directly loadable into the memory of a digital computer and software code) is useful (establishes the specific, substantial, and credible utility the computer program product) only if at least made available for use in the disclosed practical application, concrete it the program code is based on objective criteria, and tangible if it is more than just a thought or computation within a digital processor, instead being a real world result. In this instance, claim 22 does not appear to produce a tangible result

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such that the usefulness of the computer program product can be realized. It therefore appears non-statutory.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-13 and 19-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Reshetov et al., hereinafter, Reshetov (U.S. Patent number 6, 819, 793 B1) in view of Acharya, thereinafter AcharYa (U.S. Patent number 6, 269, 181 B1).

Regarding claim 1, Reshetov discloses **a method for texture compressing images** (see column 5, lines 1-6 and column 6, lines 1-5) **having a plurality of color components (R, G, B)** (see column 5, lines 34-36), **including defining color representatives for use in encoding, the method comprising defining groups of colors for each the color component (R, G, B)** (see column 5, lines 34-36 and column 10, lines 54-58).

Reshetov does not disclose **selecting, for each the group of colors, a representative median color**.

Acharya discloses **selecting, for each the group of colors, a representative median color** (see column 3, lines 28-30 and fig.4).

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Acharya's selecting, for each the group of colors, a

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representative median color in Reshetov's a method for texture compressing images because it will allow to select neighboring pixels to attain missing color components for raw image pixels, [Acharya's, see column 2, lines 53-57].

Regarding claim 2, Reshetov discloses the method of claim 1, wherein each the group comprises 3 to 15 colors (see fig.5, 6 and 7, and column 9, lines 30-37).

Regarding claim 3, Acharya discloses the method of claim 1, wherein the median color is selected as a member of the respective group located in a middle position of the members of the group arranged in ascending order (see item 430, fig.4 and column 10, lines 19-29).

Regarding claim 4, Reshetov discloses the method of claim 1, further comprising computing, for each the group of colors, an error between each member of the group and the representative color of the group (see column 11, lines 34-38).

Regarding claim 5, Reshetov discloses the method of claim 4, wherein computing the error comprises summing the absolute differences (SAD) between each member of the group and the representative color of the group (see column 11, lines 44-57).

Regarding claim 6, Reshetov discloses the method of claim 4, further comprising finding a minimum composite error (see column 11, lines 38-40).

Regarding claim 7, Reshetov discloses the method of claim 1, further comprising excluding groups that include only a minimum color (see column 24, lines 5-8) or a maximum color (see column 22, lines 5-8).

Regarding claim 8, Reshetov discloses the method of claim 1, further comprising defining two sets, each set including some groups of color for each the color component (R, G, B) independently (see column 10, lines 54-58), wherein, in one of the two sets, each group includes an increasing number of colors starting from a minimum color and excluding a group with only a lowest color and, in the other of the sets, each group includes a decreasing number of colors starting from a maximum color and excluding a group with only a highest color (see column 16, lines 9-14, i.e., increasing number of colors or decreasing number of colors referred as to sequential order).

Regarding claim 9, Reshetov discloses the method of claim 4, further comprising computing, for each group, the error (see column 11, lines 34-38) Between each color composing the group, whereby two sets of errors are computed (E_i and e_j), selecting a first the group and a second the group wherein the first group is the group with the minimum error of all the members of the first set of errors (E_i) and the second group is the one that has the minimum error of all the members of the second set of errors (e_j) (see column 11, lines 34-50); or all possible combinations of the errors of the first and second sets ($E_i + e_j$) are computed, a global minimum value is found and the first and second groups are jointly selected as those corresponding to the global minimum (see column 11, lines 34-50).

Reshetov does not disclose the median color.

Acharya discloses the median color (see column 3, lines 28-30 and fig.4).

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Acharya's selecting, for each the group of colors, a representative median color in Reshetov's a method for texture compressing images because it will allow to select neighboring pixels to attain missing color components for raw image pixels, [Acharya's, see column 2, lines 53-57].

Regarding claim 10, Reshetov discloses the method of claim 1, further comprising defining only two groups of colors (see column 10, lines 54-58).

Regarding claim 11, Reshetov discloses the method of claim 10, wherein the two groups comprise the yellow group and the red group (see column 10, lines 54-58).

Regarding claim 12, Reshetov discloses the method of claim 10, wherein the two groups of colors include 3 and 5 members (see column 10, lines 54-58, i.e., 3 and 5 referred as to a coordinate point).

Regarding claim 13, Reshetov discloses the method of claim 1, wherein the images are RGB color images (see column 10, lines 26-30) and the color components are the R, G, and B components of the RGB image (see column 10, lines 54-58).

Regarding claim 19, Reshetov discloses a processor (see item 402, fig.4) for texture compressing images (see column 5, lines 1-6 and column 1-5) having a plurality of color components (R, G, B) (see column 5, lines 34-36), including defining color representatives for use in encoding, comprising means for defining

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groups of colors for each the color component (R, G, B) (see column 5, lines 34-36 and column 10, lines 54-58).

Reshetov does not disclose **means for selecting, for each the group of colors, a representative median color.**

Acharya discloses **means for selecting, for each the group of colors, a representative median color** (see column 3, lines 28-30 and fig.4).

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Acharya's selecting, for each the group of colors, a representative median color in Reshetov's a method for texture compressing images because it will allow to select neighboring pixels to attain missing color components for raw image pixels, [Acharya's, see column 2, lines 53-57].

Regarding claim 20, Reshetov discloses the processor of claim 19, wherein the processor comprises a dedicated processor (see item 402, fig.4 and column 7, lines 59-60).

Regarding claim 21, Reshetov discloses the processor of claim 19, wherein the processor comprises a general-purpose processor (see item 402, fig.4, and column 4, lines 12-13).

Regarding claim 22, Reshetov discloses a computer program product directly loadable into the memory of a digital computer (see item 404, fig.4) **and including software code portions for performing a method** (see column 6, lines 55-58), **when the product is run on a computer processor** (see item 402, fig.4), **for texture compressing images** (see column 5, lines 34-36), **having a plurality of color**

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components (R, G, B) (see column 5, lines 34-36 and column 10, lines 54-58),
including defining color representatives for use in encoding, comprising defining groups of colors for each the color component (R,G,B) (see column 5, lines 34-36 and column 10, lines 54-58).

Reshetov does not disclose **selecting, for each the group of colors, a representative median color.**

Acharya discloses **selecting, for each the group of colors, a representative median color** (see column 3, lines 28-30 and fig.4).

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Acharya's selecting, for each the group of colors, a representative median color in Reshetov's a method for texture compressing images because it will allow to select neighboring pixels to attain missing color components for raw image pixels, [Acharya's, see column 2, lines 53-57].

Allowable Subject Matter

5. **Claims 14-18** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Because none of the prior art recited the claim limitation, "**computing a Euclidean distance (Dist_{ij}) $\text{Dist}_{ij} = \sqrt{(|R_{ij} - \text{min_medianR}|^2 + |G_{ij} - \text{min_medianG}|^2 + |B_{ij} - \text{min_medianB}|^2)}$ where R_{ij} , G_{ij} , B_{ij} represent the color components**" in claim 14.

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Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aklilu k. Woldemariam whose telephone number is 571-270-3247. The examiner can normally be reached on Monday-Thursday 6:30 a.m-5:00 p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alexander Eisen
SPE
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A.W.
8/27/2007